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NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS.

TECHNICAL MEMORANDUM. 82

FLIGHT TEST OF THE HANDLEY PAGE TORPEDO-CARRYING AIRPLANE.

Editorial from "The Aeroplane,"  
March 8, 1922.

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April, 1922.

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LANGLEY MEMORIAL AERONAUTICAL  
LABORATORY  
WASHINGTON, D. C.

REPORT OF THE  
LANGLEY MEMORIAL AERONAUTICAL  
LABORATORY  
NATIONAL AERONAUTICS AND  
SPACE ADMINISTRATION

Langley Field, Virginia

STRAIGHT DOC. FILE



## FLIGHT TEST OF THE HANDLEY PAGE TORPEDO-CARRYING AIRPLANE.

Editorial from "The Aeroplane."

March 8, 1922.

Actually what one believes to be the most important event of the week, in that its ultimate influence on civil aviation will be considerably greater than the appointment of the Advisory Board or the establishment of the various Air Lines hereinbefore discussed, has been the testing of the Handley Page torpedo-carrying machine. This machine is an ordinary-looking biplane, fitted with the Handley Page slots and is in fact the first aeroplane to be flown built expressly for the slotted wing.

One has not been allowed to see the machine and therefore one is not abusing any confidences in commenting on it. Consequently one is at liberty to say that it is an excellent example of the triumph of matter over mind, in that as an aeroplane it is a success in spite of the perfectly absurd way in which the best brains of the Department of Research have dealt with it. Perhaps however it may be best to describe what the machine itself has done and afterwards to explain what ought not to have been done to it.

Therefore let it be said briefly that the machine is, as already mentioned, a biplane with a Napier engine and that as flown during its test last week it was carrying about 8 lbs. to the sq.ft. It had been flown a little the previous week but it made its first serious tests on Monday, February 27th. The pilot was



Mr. Wilcockson, who is a very able and experienced air line pilot but has not been regarded hitherto as a specialist in testing new and strange machines. Therefore the performance is actually evidence of the maniability of the machine as well as of the versatility of Mr. Wilcockson. There was a fairly fresh wind blowing which of course assisted the machine but also demonstrated its peculiar suitability for air line work.

Getting off the Cricklewood Aerodrome head to wind with both top and bottom slots open the machine lifted in about 10 yards. Thereafter Mr. Wilcockson flew it round for awhile showing that it was as controllable in the air as any other machine and then he came in over the aerodrome head to wind at about 1,500 feet, opened the slots and throttled down the engine. The machine then began to sink vertically. As gusts struck it it was blown back a few yards but by dipping the nose or opening his engine slightly the pilot made up his leeway and eventually landed practically at a standstill at a point on the aerodrome vertically underneath where he had shut off his engine.

The get-off and the landing showed that the machine could have got out of and into any ordinary football field with trees round it or that it could have got out of and into a tennis lawn provided that there was nothing higher than a hedge round it. In fact it demonstrated exactly what this paper has been trying to drum into the heads of aircraft manufacturers and aeronautical authorities for a year or more, namely, that with proper wing



arrangement it is possible to do all that helicopter experts are trying to do and a little more as well.

#### Safety and Economy.

The new Handley Page biplane has definitely demonstrated that it can overcome two of the very greatest drawbacks to civil aerial transport as it is at present, namely, the need for a long run in getting off and the danger of high speed landings. The aeroplane that can get into and out of any ordinary field is not only going to increase the safety of flying from the passenger's point of view but it is going to save the majority of the minor accidents which cause aeroplanes to be written off at the expense of the insurance companies although no lives are lost.

One suggests therefore that it would be well for the insurance companies themselves to look into this question very carefully, for obviously the more flying there is done the more money the insurance companies are going to make. The way in which the insurance companies can best assist the development of Civil Aviation is by refusing to insure machines older than a certain date and by insisting on very high premiums for machines which do not include those developments which make for safety in cross-country flying.

#### Departmentality Run Mad.

So much, then, for the actual performance of the machine. It seems now worth while to point out the curiously foolish way in which the Department of Research has handled the matter.



In the first place, of course, a passenger-carrying machine of this type ought to have been ordered by the Department of Civil Aviation a year ago when the Department had money to spare, which money was afterwards returned to the Treasury. But of course it would have been too much to expect that Department, as at present constituted, to make up its mind or to give a decision on such a matter without discussing it for at least a year. Therefore, as usual, it was the militant side of the Air Ministry which had to do what the Civil Aviation side should have done.

Unfortunately, however, the enthusiastic technicians of the various sub-departments of the Department of Research were let loose on the unfortunate machine with the result that instead of building a perfectly simple aeroplane to discover what the wings would do they insisted on believing that the wings were already right and proceeded to specify a complete torpedo-carrying ship plane on that basis, each little department loading on all the gadgets with which it is concerned. Which may have been a very pretty compliment to Mr. Handley Page's success in convincing the Authorities of the efficacy of his wing but was certainly asking rather too much of a wing scheme which is still in fact in its experimental stages. For even the Handley Page technical men themselves cannot pretend that the slotted wing is yet approaching its final development, either aerodynamically or constructionally.

Anyhow, the result is that this experimental machine is equip-



ped with so many different gadgets that any pilot told off to fly it as a Service machine will need a special education in handling it.

As one has said, one is only writing of the actual machine from hearsay. Therefore, one cannot guarantee that the following description is exact, but it may be taken that it rather under-estimates than over-estimates the number of gadgets.

Those which are supposed to be worked by the hands alone are alleged to be as follows: (1) the ordinary "joy-stick"; (2) throttle lever; (3) spark lever; (4) ignition switch; (5) self-starter handle; (6) tail-adjuster lever; (7) Upper plane top slot operating lever; (8) Lower plane slot operating lever; (9) lever for jettisoning petrol; (10) torpedo-dropping lever; (11) torpedo-heater control; (12) torpedo depth control; (13) release lever for wheels; (14) lever for adjusting deck-landing hooks; (15) radiator shutter lever; (16) night-landing flare controls; (17) navigation light switch; (18) wireless gadgets; (19) machine-gun trigger; (20) bomb-release gear.

One forgets how many more there are to be worked by the feet or teeth apart from dials to be watched, but enough have been mentioned to indicate that a pilot has to have a fairly intimate knowledge of the machine and a fairly cool head to remember even so many different gadgets. There are in fact quite a lot more and consequently the machine is known entirely unofficially as the Heinz, because of its "57 Varieties" of levers and assorted



cockpit gadgets.

If the machine is actually a success as a Service torpedo-dropper in spite of all this then of course the triumph for Mr. Handley Page is all the greater. And if the machine comes to an untimely end through some unfortunate pilot jettisoning his petrol when landing under the impression that he is opening his wing slots, then of course no blame can attach to the machine or to its designers and constructors. It is therefore all the more necessary to make it perfectly clear now that under test simply as an aeroplane and not as a jigsaw puzzle for pilots the machine has definitely marked a very considerable step forward in the development of aircraft.

#### A Straight Comparison.

There is nothing new in a vertical descent when gliding head to wind. Probably very few of the technical authorities at the Air Ministry or in any other of the Government's aeronautical departments have seen it done. But those mere aeronautical enthusiasts who frequented Hendon before the War, have often seen our old friends Louis Noël and Pierre Verrier do a vertical descent from a height of a couple of thousand feet with their engines dead stopped on Maurice Farman's. Also quite a number of the earlier R.F.C. pilots may have seen the skillful aviators of the early days of the War make similar landings on B.E.s, against strong winds.



The difference is that whereas in the case of the Maurice Farman the machine was doing these slow glides with a loading of 2 lbs. to the square foot and whereas the B.Es were doing it with a loading of about 4 lbs. to the square foot, the Handley Page did it at 8 lbs. to the square foot. When one gets beyond such weight it is possible by eliminating official gadgets to produce a machine which comes very near carrying a paying commercial load without the aid of subsidies. That is where the real advance has been made. (C.G.G.)

